

### Abstract

In an aspect of the present invention, a thermo-optic phase shifter includes a substrate, a heater, a clad layer formed directly or indirectly on a substrate, an optical waveguide clad layer  
5 formed apart from the substrate and the clad layer in a portion corresponding to the heater, and a core layer provided inside said bridge section clad layer. The optical waveguide clad layer is  
10 connected with the clad layer in a portion of the phase shifter other than the heater corresponding portion. The optical waveguide clad layer and the core layer form an optical waveguide in the heater corresponding portion. The heater is provided  
15 inside or outside the optical waveguide apart from the core layer in the heater corresponding portion, and generates heat to change a phase of a light signal propagated in the optical waveguide.